**Making Information Work for the Warfighter: Applications of Modeling & Simulation**

# JAWS S3 Symposium

Seventh Annual Joint Aerospace Weapon Systems Support, Sensors, and Simulation Symposium & Exhibition (JAWS S3)

22-26 July 2001 ◆ San Diego, California

In Conjunction with Defense Modeling & Simulation Office, Office of the Secretary of Defense, Office of Naval Research, Naval Air Systems Command, Air Force Research Laboratory, & Ogden Air Logistics Center

# Welcome

Welcome to our Joint Aerospace Weapon Systems, Support, Sensors, and Simulation (JAWS 3) Symposium and Exhibition 2001. Our theme "Making Information Work for the Warfighter: Applications in Modeling and Simulation," emphasizes the need for research and development, and deployment of technologies required to meet the critical needs of the warfighter. The integral elements of this symposium are discussions on acquisition processes (what is going on and what is in the future), decision makers' points of view (where technology insertions and cooperation are needed), technical interchange between the services and its partners from academia and industry, and awareness of available facilities for sharing. The combination of tutorials, technical papers, poster papers, and exhibits represent some of the leading research and development going on in the industry, academia, and the services. The presenters are the leaders in the modeling and simulation arena. Please take advantage of the opportunity to interact with them and share your knowledge. The extraordinary guest speakers, exhibits, luncheons, and other social events provide excellent networking opportunities that make this event well worth your time and money. Enjoy the program!

Dr. Asha Varma, FAIC, CPC, NAVAIR Fellow
Chair, JAWS S3 Symposium & Exhibition
Naval Air Systems Command
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# Acknowledgements

# Hosted By

*SPAWAR Systems Center*

# In Conjunction With

*Air Force Research Laboratory*
*Defense Modeling and Simulation Office*
*Eglin AFB*
*Naval Air Systems Command*
*Office of Naval Research*
*Office of the Secretary of Defense*
*Ogden Air Logistics Center*

# Administered By

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# Symposium Working Group

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**Naval Air Systems Command**

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San Antonio, TX

*Dr. Kenneth Lima*
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# General Information

## COMMUNICATIONS
Attendees can receive phone and fax messages during the conference at the registration desk in the conference center. The phone number is (619) 291-7131 (ext. 3184 or ask for the JAWS Symposium). The fax number is (619) 574-6712.

## LUNCHES
Lunches on Monday and Tuesday will be the responsibility of the attendee. There are a variety of restaurants on the property and within walking distance of the hotel.

Lunch on Wednesday will be in the exhibits area (Golden Ballroom) and will feature guest speaker, Col Ricky Ales, Air Force Agency for Modeling and Simulation.

Lunch on Thursday will be in the Royal Palm Courtyard and will feature guest speaker RADM Herb Browne, U.S. Navy (Ret.).

## NAVY COMBAT SHIP TOUR
A tour of the USS ANCHORAGE will be available on Sunday afternoon. A bus will leave the Town & Country Atlas Foyer Semi-Circle at 1245 and return around 1430.

USS ANCHORAGE is a Dock Landing Ship (LSD) designed to operate as an integral part of a balanced, mobile and modern amphibious strike force. The ship couples a well deck with a flight deck to give greater dimension to the Navy's troop and vehicle lifting capability. Primarily designed to transport pre-loaded heavy landing craft to the shore and discharge them rapidly, she is also equipped with machine shops and facilities to provide dry docking and repairs to small boats. ANCHORAGE has the berthing, feeding and cargo storage capability for over 400 fully equipped combat troops. Intrinsic in the well deck operation is a ballasting system that fills the deck with sea water to a depth necessary for loading landing craft such as the LCU and LCAC. USS ANCHORAGE is the first of a class of five Dock Landing Ships.

## PRIZE GIVE-AWAYS
Two Palm Pilots will be given away at the end of the Luncheon on Thursday. To qualify for the drawing, tickets will be given throughout the week for attendance at the end of each session, panel, and tutorial and for turning in your Symposium Evaluation Form. You must be present at the drawing to win.

## SYMPOSIUM ATTIRE
Business Casual

# Agenda-At-A-Glance

| Sunday<br>22 Jul | Monday<br>23 Jul | Tuesday<br>24 Jul |
|---|---|---|
| 1230 - 1430<br>Navy Ship Tour<br>Transportation<br>Provided | 0700 - 0800<br>Cont Breakfast - GF | 0700 - 0800<br>Cont Breakfast - GF |
| | 0700 - 1730<br>Registration -GF | 0700 - 1730<br>Registration - GF |
| 1600 -1730<br>Registration & Social<br>GF | 0800 - 0930<br>Tutorial 1:  CRSIP - PS1 | 0800 - 0830<br>Keynote - PS1 & 2 |
| | Tutorial 2: HLA - PS2 | 0830 - 0845<br>Plenary Lecture -PS1 & 2 |
| | 0930-1000 Break - GF | |
| | 1000 - 1200<br>Tutorial 1:  CRSIP - PS1 | 0845 - 1015 Panel 2<br>The DoD Anti-Tamper<br>Initiative - PS1 & 2 |
| | Tutorial 2: HLA - PS2 | 1015 - 1600<br>Exhibits Open - GB |
| | 1000 - 1630<br>Exhibit Set-up - GB | |
| **Thanks for Participating in JAWS S3 Symposium 2001!**<br><br>**Watch for Info on JAWS 2002.** | 1200 - 1300 Lunch Break | 1015-1045 Break - GB |
| | 1230 -1245<br>Busses load for Panel 1<br>at SPAWAR | 1045 - 1215<br>Panel 3: Synthetic Ntrl<br>Envrmt - PS1 & 2 |
| | 1300  - 1430<br>Tutorial 1: CRSIP - PS1 | 1215 - 1330 Lunch Break |
| | Tutorial 3: SEDRIS - PS3 | 1330 - 1510<br>Session 1: Integrated<br>Ntrl Envrmt - PS1 & 2 |
| | 1300 - 1500<br>Tutorial 2: HLA - PS2 | Session 2: Special<br>Topics - PS3 |
| | 1330  - 1730<br>Panel 1: Assuring<br>Information Superiority<br>(Classified) - SPAWAR | 1510 - 1535 Break - GB |
| | 1430-1500 Break - GF | 1535  - 1655<br>Session 1: Integrated<br>Ntrl Envrmt - PS1 & 2 |
| | 1500 - 1700<br>Tutorial 1: CRSIP - PS1 | 1535 - 1745<br>Session 2: Special<br>Topics - PS3 |
| | Tutorial 3: SEDRIS - PS3 | 1800  - 2000<br>Reception - GB |

| Wednesday 25 Jul | Thursday 26 Jul |
|---|---|
| 0700 - 0800 Cont Breakfast - GF | 0700 - 0800 Cont Breakfast - GF |
| 0730 - 1700 Registration GF | 0800 - 1130 Registration - GF |
| 0730 - 1200 Exhibits Open - GB | 0800 - 0900 Dr. Michael Falat Distinguished Speaker |
| 0800 - 0945 Panel 4: Joint Synthetic Battlespace PS1 & 2 | 0900 - 1130 Panel 6: Industry Perspective on Modeling & Simulation for the Warfighter PS1 & 2 |
| 0945 - 1015 Break - GB | |
| 1015 - 1200 Panel 5: Ntwrk Centric Warfare - PS1 & 2 | 1130 - 1300 Luncheon with VADM Herb Browne, Navy (Ret) RPC |
| 1200 - 1330 Luncheon with Col Ales - GB | |
| 1330 - 1530 Exhibits Open - GB | 1300 - 1500 Session 5: Collaborative Engineering PS1 & 2 |
| 1330 -1510 Session 3: Network Centric Warfare PS1 & 2 | |
| | Session 6: Advanced Sensors - PS3 |
| Session 4: Modeling & Simulation - PS3 | 1500 - 1530 Break - GF |
| 1510 - 1540 Break - GB | 1530 - 1725 Session 5: Collaborative Engineering - PS1 & 2 |
| 1540 - 1720 Session 3: Network Centric Warfare PS1 & 2 | |
| | 1530 - 1700 Session 6: Advanced Sensors - PS3 |
| Session 4: Modeling & Simulation - PS3 | |

# Security

### CLASSIFIED PANEL (Assuring Information Superiority)

The Panel on Monday afternoon will be *classified at the SECRET/NOFORN level* and will be held at the SPAWAR Systems Center. All attendees must have provided proof of security clearance. Busses arrive at the Town & Country at 1230 for a 1245 departure to SPAWAR. Private driving to SPAWAR is discouraged due to limited parking.

### US CITIZENS PANEL (DoD Anti-Tamper Initiative)

Panel 2 on Tuesday is restricted to US citizens only/NOFORN.

### ELECTRONIC DEVICES

No electronic devices of ANY kind will be admitted into the Classified Panel. This includes, but is not limited to, incoming and outgoing pager or beepers, cell phones, palm pilots, audio/visual recording devices, and photographic equipment. Briefcases and planners are also prohibited. It is recommended that purses be left in your rooms or the hotel safe. If you do bring a purse, it may be subject to a search before you gain admittance into this session.

### ADMISSION INTO THE SYMPOSIUM

All attendees must show the following identification at conference registration:
- A company or government picture identification card, or
- A letter from the company security officer or company president verifying employment with the said company and personal picture identification, such as a driver's license or passport.

*No other forms of identification other than those listed above will provide admittance into the Symposium. Those who do not comply with these personal identification requirements will be denied admittance.*

# Featured Speakers

### General Larry Welch
### U.S. Air Force (Ret)
### Tuesday Keynote

President and Chief Executive Officer of The Institute for Defense Analyses (IDA) in Washington D.C.

### Mr. Anthony Grieco
### Tuesday Plenary Lecture

Mr. Anthony Grieco serves as the Deputy Director, Electronic Warfare Systems, Under Secretary of Defense for Acquisition.

### Colonel Ricky Ales
### Wednesday Luncheon

Colonel Ales serves as the Commander, Air Force Agency for Modeling and Simulation in Orlando, Florida

### Dr. Michael Falat
### Thursday Morning Address

Dr. Falat serves as the Deputy Director of Software Intensive Systems for the Office of the Deputy Undersecretary of Defense (Science & Technology)

### Vice Admiral Herb Browne
### U.S. Navy (Ret)
### Thursday Luncheon

VADM Browne joined GRC International, an AT&T company, as Vice President and General Manager in December 2000 to work Intelligence/surveillance/reconnaissance programs. He is Director of ISR and keeps his eye on Navy Programs.

# Monday, 23 July (0800 - 1700)

# Tutorial 1

### Location: Pacific Salon 1

## Computer Resources Support Improvement Program (CRSIP)

The Air Force's Computer Resources Support Improvement Program is responsible for promoting software process improvement and transition of technologies for affordable development and upgrade of systems. Technology transition is aimed at affordably designing and developing state-of-the-art hardware and/or software for highly complex, time-critical, global information systems. CRSIP is working to enable the Air Force to upgrade hardware and software to incorporate new features that will adapt to changing environments and missions, and develop technologies to verify integrity of complex systems.

This introduction is intended to provide a context for tutorials on CRSIP projects to improve requirements definition and to affordably upgrade and sustain software intensive systems.

0800-0830 - "CRSIP Overview," Lt Col Glenn Palmer (Ogden Air Logistics Center)
0830-0930 - "Requirement for Good Requirements," Dr. Dave Cook (Shim Enterprises)
0930-1000 - Break
1000-1100 - "Requirement for Good Requirements (cont)," Dr. Dave Cook (Shim Enterprises)
1100-1200 - "Re-Use of Legacy JOVIAL Software in Embedded Systems," Mr. Dick Petersen (Software Engineering Associates)
1200-1300 - Lunch Break (on your own)
1300-1430 - "Secure Communications Across Network Firewalls," Mr. Mark Stephenson and Mr. Steve Walters (SAIC)
1430-1500 - Break
1500-1700 - "Personal Software Process/Team Software Process (PSP/TSP)," Mr. Jim Van Buren (C.S. Draper Laboratory STSC)

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# Tutorial 2

**Location: Pacific Salon 2**

## High-Level Architecture

The High Level Architecture (HLA) creates a general purpose architecture for simulation, reuse, and interoperability. Developed under the leadership of the Defense Modeling and Simulation Office (DMSO), HLA supports reuse and interoperability across the large numbers of different types of simulations developed and maintained by the DoD.

0800-0930 - "Introduction to the HLA for Simulations," Mr. Mike Lightner (Aegis Technologies Group, Inc.)
0930-1000 - Break
1000-1200 - "HLA Federation Development and Execution Process (FEDEP) & Supporting Tools," Mr. Jake Borah (Aegis Technologies Group, Inc.)
1200-1300 - Lunch Break (on your own)
1300-1500 - Insights into HLA Federation Development Issues," Mr. Jake Borah (Aegis Technologies Group, Inc.)

# Tutorial 3

### Location: Pacific Salon 3

## Synthetic Environment Data Representation and Interchange Specification

### Presented by: Mr. Farid Mamaghani (Institute for Defense Analyses Associate) and Dr. Lou Hembree (Naval Research Laboratory)

The Synthetic Environment Data Representation and Interchange Specification (SEDRIS) is a mechanism for the representation and interchange of environmental data found in a variety of simulation and non-simulation applications. SEDRIS allows for the representation of the ocean, the ocean bottom, and ocean features (both natural and man-made); terrain and terrain features (both natural and man-made); 3-D models of vehicles, personnel, and other objects; the atmosphere, including environmental phenomena; and space. One of the SEDRIS objectives is to provide a mechanism for the unambiguous interchange of environmental data for every type of simulation application.

This tutorial session will focus on an overview of key SEDRIS technologies. The tutorial will provide attendees an overview of SEDRIS fundamentals, a brief status report on project activities, and will highlight the standardization efforts. Several tools built on top of SEDRIS core technologies will also be demonstrated.

# Panel 1

### Classified Session (Secret/U.S. Only)
### Location: SPAWAR Systems Center

## Assuring Information Superiority

### Chairpersons: Mr. William Swart
### (Joint Information Operations Center) & Mr. James Price
### (SPAWAR Systems Center)

*Moderator: Mr. John Audia (SPAWAR Systems Center)*

◆ Mr. David Lemmon (Air Force Information Warfare Center)
◆ Mr. Tony Sager (National Security Agency)
◆ Mr. Brian Witten (Defense Advanced Research Projects Agency)
◆ Mr. John Audia (SPAWAR Systems Center)
◆ LCDR Shawn Murphy (Fleet Information Warfare Center)
◆ Mr. Richard Brackney (National Security Agency)

Information Superiority is the underlying foundation for building the future capabilities of Joint Vision 2020. Precision weapons require precision information to live up to their potential effectiveness. Time sensitive targets can only be prosecuted with time sensitive information. To preserve the advantage of our future military capabilities we must be able to protect and preserve our information advantage. This session will bring together a panel of senior DoD officials to talk about and answer questions on the Information Operation (IO) threat, DoD plans to defend our networks, techniques and tools an adversary might use against our information or information systems, and R&D being conducted to assure our information.

Presentations will be made at SPAWAR Systems Center. Busses will arrive at the Town & Country Convention driveway promptly at 1230 for a 1245 departure to SPAWAR. Busses will leave SPAWAR at 1740 and will head back to the Town & Country Resort & Convention Center. Private driving to SPAWAR is discouraged due to limited parking.

# Tuesday, 24 July (0845 - 1015)

# Panel 2
### Location: Pacific Salons 1 & 2

## The DoD Anti-tamper Initiative: Has DoD Gone Too Far or Not Far Enough?

**Chairpersons: Mr. Anthony Grieco**
**(Deputy Director, Electronic Warfare Systems, Under Secretary of Defense for Acquisition) & Dr. Kenneth Lima**
**(Naval Undersea Warfare Center)**

*Moderator: Lt Col Tim McKelvey (AFRL/MNAV)*

◆ Col David Hamilton (SAF/AQL)
◆ Mr. Ron Dostie (ASN/RDA)
◆ Mr. Mark Bianco (Raytheon Missile Systems)
◆ Mr. Bruce Schulte (IIT Research Institute)
◆ Mr. Christopher Henderson (Sandia National Laboratories)
◆ Mr. Michael Rithmire (Army Special Programs)

The purpose of this panel is to disseminate information about overall AT initiative and to engage in discussions addressing the panel topic. Following a 15-minute introduction to AT by panel co-chair, Mr. Anthony Grieco, panel members will briefly summarize their agency's current role in AT and future plans associated with AT. The panel will collectively discuss: (1) the strengths and shortcomings of the current structure and implementation of the AT program, (2) the impact of this initiative on service acquisition programs, and (3) options that might enable the program to more effectively meet its goal.

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# Tuesday, 24 July (1045 - 1215)

# Panel 3

### Location: Pacific Salons 1 & 2

## Synthetic Natural Environment

**Chairpersons: Col Phil Faye
(Air Force Materiel Command/Electronic Systems Command) &
Mr. William McQuay (Air Force Research Laboratory)**

*Moderator: Ms. Sylvia Centeno (LYS Software Engineering Division,
Robins AFB)*

- ◆ Mr. Juan Perez (Defense Modeling & Simulation Office)
- ◆ Mr. Eddie Burroughs (Virtual Prototyping Grounds)
- ◆ Mr. Richard Worsham (Northrop-Grumman)
- ◆ Mr. David Berkman (Northrop Grumman)
- ◆ Dr. Gene Goldstein (Raytheon)
- ◆ Lt Col (S) Emily Andrew (ESC)

The Synthetic Natural Environment (SNE) provides the modeled representations of land, water, atmosphere, space and cultural features necessary to interact with multi-spectral sensors models to support systems engineering and interoperability studies. In addition to the SNE components, the Synthetic Multispectral Environment (SMSE) provides the modeled representations of civilian cultural features, player platforms/weapons and target and threat components to support systems engineering and interoperability studies.

This panel will address current M&S use in sensor engineering studies, high level requirements for sensor-SNE interactions needed to support real-time virtual or constructive applications, the identification of general capabilities and limitations of SNEs use in representative sensor engineering models, a first order list of SNE data and service requirements, and the functional definition of and relationship between the SNE and SMSE.

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# Tuesday, 24 July (1330 - 1655)

# Session 1

### Location: Pacific Salons 1 & 2

## Integrated Natural Environment

**Chairpersons: Lt Col Eileen Bjorkman
(Defense Modeling & Simulation Office)
& Lt Cdr Benny Webb (Air Force Weather Agency)**

*Moderator: Mr. Pat Sisson (Anteon Corporation)*

1330-1355 - "INE Authoritative Representation Process (ARP) Overview,"
Mr. Juan  Perez  (Defense Modeling & Simulation Office) and
Maj Mark Schrader (Air Force Weather Agency/American
Society of Naval Engineers)

1355-1420 - "MSE," Mr. Floyd Adagio (Joint Strike Fighter SPO)

1420-1445 -"The Environmental Scenario Generator," Maj Mark
Schrader (AirForce Weather Agency/American Society of
Naval Engineers)

1445-1515 - Break

1515-1540 - "Advanced Climate Modeling and Environmental Simulations
(ACMES)," Maj Mark Schrader (Air Force Weather Agency/
American Society of Naval Engineers)

1540-1605 - "EnviroFed," Mr. Juan Perez (Defense Modeling & Simulation
Office)

1605-1630 - "Master Environmental Library (MEL)," Mr. John Hughes (Mitre
Corporation)

1630-1655 - "Joint Virtual Battlespace," Mr. Jack Harrington (Night Vision
Laboratory)

# Tuesday, 24 July (1330 - 1745)

# Session 2

**Location: Pacific Salon 3**

## Special Topics

**Chairpersons: Lt Col Tim McKelvey
(Air Force Research Laboratory) & Dr. Joyce Tokar (DDC-I)**

*Moderator: Mr. Gerald White (OO ALC/TI)*

1330-1355 - "Foundation Initiative 2010: The Foundation for Test and Training Interoperability," Mr. Gene Hudgins (NUWC)

1355-1420 - "Simulation Based Acquisition: The Basis for Building in Interoperability," Lt Col (S) Emily Andrew (Electronic Systems Command)

1420-1445 - "Joint Synthetic Battlespace (JSB): Applying Simulation to Acquisition, Mission Effectiveness, and Course of Action Analyses," Col Phil Faye (Electronic Systems Command)

1445-1510 - "SIAP," Mr. Timothy Woodruff (Raytheon/Joint National Test Facility)

1510-1535 - Break

1535-1600 - "Systems Engineering Approach to Data Link," Mr. John Roberts (Mitre Corporation)

1600-1625 - "Sharpening the Blade," Dr. Joyce Tokar (DDC-I)

1625-1650 - "Autonomous Operations (AO) Future Naval Capabilities (FNC) UAV Autonomy Program," Dr. Gerald Mersten (Office of Naval Research)

1650-1720 - "Undersea Command and Control Visualization," Mr. Richard Shell (Naval Undersea Warfare Center)

1720-1745 - "The Warhead Design Creativity Machine," Mr. Steve Thaler (Imagination Engines, Inc.)

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# Panel 4

### Location: Pacific Salons 1 & 2

## Joint Synthetic Battlespace

**Chairpersons: Col Phil Faye
(Air Force Material Command/Electronic Systems Command) &
Lt Col (S) Emily Andrew (Electronic Systems Command)**

*Moderator: Ms. Maureen Rogers (Naval Air Systems Command)*

- ◆ Mr. Jack Schelnutt (Boeing)
- ◆ Mr. Matt Landry (Lockheed-Martin)
- ◆ Mr. Tom Frost (Joint Warfighting Center)
- ◆ Mr. John Roberts (MITRE)
- ◆ Mr. Jack Harrington (Virtual Technologies, Corp.)

The task of effectively acquiring weapon systems has become increasingly challenging because of the complex environment within which these systems must interoperate. Modeling and Simulation (M&S) is the enabling technology for warfighters and analysts to efficiently understand and communicate the weapon system operational environment as they identify and implement effective solutions. Using M&S throughout the acquisition lifecycle of a weapon system is the cornerstone of the DoD Simulation Based Acquisition (SBA) initiative. The Joint Synthetic Battlespace (JSB) provides an approach to SBA for weapon system acquisition that will meet near-term acquisition needs and can evolve to achieve the SBA vision. Instrumental to the JSB success is development of a collaborative team that includes industry and government partners working technical and programmatic issues via an Integrated Product Team (IPT) process. This panel will discuss the current and potential roles of JSB Simulation tools in support of the warfighter, the focus of and a direct participant in the acquisition process.

# Wednesday, 25 July (1015 - 1200)

# Panel 5
### Location: Pacific Salons 1 & 2

## Network Centric Warfare

### Chairpersons: Dr. John Robusto (Naval Air Systems Command) & Dr. Gerald Mersten (Naval Air Systems Command)

### *Moderator: Dr. Asha Varma (Naval Air Systems Command)*

- ◆ Mr. John Garstka (J6, Pentagon)
- ◆ Mr. Bruce Powers  (Office of the Chief of Naval Operations-N814)
- ◆ Mr. Michael Barrett (Naval Air Systems Command)
- ◆ Dr. Jude Franklin (Logicon)
- ◆ Dr. Ken Lima (NUWC)
- ◆ Dr. Albert Legaspi (SPAWAR Systems Center)

This panel tackles the challenges associated with the move from system-centric and cite-centric thought processes to network-centric thought processes. The intention of the panel is to promote discussion of the implications NCW can have on military warfare thinking.  Will military thinking be able to push the potential squared power (Metcalfe's Law) of networked sensors (nodes) in an information technology (IT) dominated battle space? How do we take advantage of this dynamic and highly survivable structure in both the offensive and defensive modes?  How does command and control play in the NCW environment? Everyone participating in this panel should come away with a greater appreciation of the potential of NCW and the challenges of adapting in the military IT environment.   The panel will explore several aspects of the "brave new world" of network centric warfare.  As all of the services move away from the more traditional platform-centric view of warfighting, there are significant performance requirements (and expectations) placed on computer networks and the components that interface with them.  We will look at a far-reaching vision of the possibilities of NCW, and then discuss various steps that are needed to achieve the vision: modeling and simulation, threats, system engineering, and experimentation.

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# Wednesday, 25 July (1330 - 1720)

# Session 3

### Location: Pacific Salons 1 & 2

## Network Centric Warfare

### Chairpersons: Mr. James Price (SPAWAR Systems Center) & Mr. William Swart (Joint Information Operations Center)

*Moderator: Ms. Tesa Crews (Anteon Corporation)*

1330-1355 - "Command Center of the Future Video," Mr. James Price (SPAWAR Systems Center)

1355-1420 - "Airborne Battle Management System," Dr. Gerald Mersten (Office of Naval Rearch)

1420-1445 - "Requirements Engineering Through Network Simulation," Lt Col Drew Hamilton, (SPAWAR Systems Center)

1445-1510 - "Toward a High Security Environment," Mr. Jesse Pollard (Naval Oceanographic Office/Logicon)

1510-1540 - Break

1540-1605 - "Outsourcing Army Installation Information Technology Modernization Runs Counter to the Public Interest," Ms. Marge Walrath (Information Systems Engineering Command/Signal Corp.)

1605-1630 - "Effects-Based Planning and Information Management for Emerging Weapon Systems," Dr. Jason Scholz (Defense Science & Technoogy Org Australia)

1630-1655 - "Analytical Foundations for Network Centric Warfare," Mr. John Gray (Naval Surface Warfare Center)

1655-1720 - "The All or Nothing Equation Dictating the Direction for Next Generation of Engagement Operations Systems," Mr. John Buckley (Jaycor)

# Wednesday, 25 July (1330 - 1720)

## Session 4

### Location: Pacific Salon 3

## Modeling and Simulation

### Chairpersons: Ms. Cynthia Ballard
### (Air Force Research Laboratory) & Lt Col (S) Emily Andrew
### (Electronic Systems Command)

*Moderator: Mr. Jim Williamson (Air Force Research Laboratory)*

1330-1355 - "ISR Military Worth Analysis using the THUNDER Campaign Model," Mr. Robert Larkin (Emergent Information Technologies, Inc.)

1355-1420 - "Joint Integrated Mission Model: The Next Step for Mission Level Models," Mr. Jamieson Gump (Electronic Systems Command)

1420-1445 - "Real-Time Joint Modeling and Simulation System (RTJMASS) Prototype Used in Distributed Simulation," Mr. William Austin (Air Force Research Laboratory)

1445-1510 - "Modeling and Simulation Tool Integration Supports Aircraft Launch and Recovery System Design," Mr. Michael Malesich (Naval Aviation Schools Command)

1510-1540 - Break

1540-1605 - "DIVERSE: A Toolkit to Integrate Distributed Simulations and Heterogeneous Virtual Environments," Dr. John Kelso (Virginia Tech)

1605-1630 - "Modeling and Simulation of Weapon Systems in the Virtual Prototype Facility," Mr. Andy Corzine (Naval Air Warfare Center)

1630-1655 - "Avionics Simulation," Dr. Richard Worsham (Northrop Grumman)

1655-1720 - "SensorCraft - Applying Simulation Based Research and Development," Mr. James Zeh (Air Force Research Laboratory)

# Thursday, 26 July (0900 - 1130)

# Panel 6

### Location: Pacific Salons 1 & 2

## Industry Perspective on Modeling and Simulation for the Warfighter

### Chairpersons: Mr. Edward Swallow
### (Strategic Planning Emergent Information Techologies, Inc.) &
### Maj Gen Norwood (Ret.) (Norwood Associates)

*Moderator: Mr. Armand Tchoubineh (Naval Air Systems Command)*

- ◆ Maj Gen George ("Nordie") Norwood, USAF (Ret) (President, Norwood Associates and consultant to the M&S market)
- ◆ Mr. Dorian DeMaio (Group Senior Vice President, Science Applications International Corporation)
- ◆ Mr. Chris Glanzmann (General Manager, Autometric, Inc. - A Boeing Corp.)
- ◆ Ms. Pamela Sullivan (Vice President TRW Space and Information Systems, Modeling and Simulation Group)
- ◆ Dr. Klaus Dannenberg (Senior Vice President, Modeling and Simulation, CACI, Inc.)

This panel will address industry perspectives on the application of modeling and simulation to bring information to the warfighter. Each member of the panel will make a short presentation on recent successes, notable shortfalls and challenges facing the integrator. Perspective will come from small, medium and large companies who operate in the analytic, training and operational simulation areas, as well as recently retired "warfighters" who have the benefit of looking at the problem from both ends. The panel will also comment on observations from previous panels.

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# Session 5

### Location: Pacific Salons 1 & 2

## Collaborative Engineering

### Chairpersons: Mr. William McQuay (Air Force Research Laboratory) & Mr. Gerald White (OO ALC)

*Moderator: Clarence W. "Wes" Kitchens*
*(Weapon Systems Technology Information Analysis Center)*

1300-1330 - "Distributed Environments for 21$^{st}$ Century Modeling and Simulation," Mr. William McQuay (Air Force Research Laboratory)

1330-1400 - "Using Modeling and Simulation in Advanced Engineering Environments," Mr. Brad Mallare (Ball Aerospace)

1400-1430 - "Simulation Based Acquisition: An Application of Collaborative Enterprise Environments," Mr. Gary Whitted (Ball Aerospace)

1430-1500 - "Solving System Integration and Interoperability Problems of Command and Control Systems Using Model Reference," Dr. Mahmoud Maklouf (Electronic Systems Command)

1500-1530 - Break

1530-1600 - "The Collaboration Forum: Exchanging Information to Support the Warfighter," Mr. Mark Stephenson (SAIC)

1600-1630 - "Joint Space Operations via an Integrated Network of Modular Open Architectures," Dr. Cyrus Azani (TRW)

1630-1700 - "Chaos/Complexity: Causing Software Failures and Creating an Intelligent Adversary Pilot," Mr. Joe Schaff (Naval Air Warfare Center)

1700-1725 - "Putting Arrows in the Warfighter's Quiver," Mr. Bob Myers (ASC/AAJ)

# Thursday, 26 July (1300 - 1700)

# Session 6

### Location: Pacific Salon 3

## Advanced Sensors

### Chairperson: Col Larry Strawser
### (Air Force Research Laboratory) & Ms. Cynthia Ballard (Air Force Research Laboratory)

*Moderator: Lt Col Glen Palmer (OO ALC/TI 3)*

1300-1330 - "Smart Sensor Web: Combining a Distributed Live and Virtual Simulation Environment," Lt Col Eileen Bjorkman (Defense Modeling & Simulation Office)

1330-1400 - "Integrated Precision SAR Targeting (IPSART); SAR Targeting Simulation," Ms. Laurana Wong (Sverdrup Technology/AFRL)

1400-1430 - "Spectral Computations for SAR Target Detection," Dr. Atindra Mitra (Air Force Research Laboratory)

1430-1500 - "Realistic Analysis and Simulation Tools for EO and IR (RASTER)," Mr. Jeff Noel (Naval Air Systems Command)

1500-1530 - Break

1530-1600 - "Results from the Munition Deployed Bomb Damage Assessment (MDBDA) Program," Lt. Rich Lopez (Air Force Research Laboratory)

1600-1630 - "GMTI HRR Sensor and Target Phenomenology," Dr. Rob Williams (Air Force Research Laboratory)

1630-1700 - "Feature Extraction from Acoustic Signals with Application to Classification of Underwater Mines," Mr. Michael Larkin (Naval Sea Systems Command)

# Poster Papers & Reception

**Location: Golden Ballroom**

**Chairpersons: Ms. Barbette Ivery (Naval Air Systems Command) & Ms. Michelle Kubal (Anteon Corporation)**

The following papers have been invited for the Poster Session:

- ◆ "Modeling Real World Strike Mission Situational Awareness," Ms. Kathy Bendot (Naval Air Warfare Center) (P1)
- ◆ "SD-Link: Getting Information Through to Where it Can Work for the Warfighter," Mr. Mark Stephenson (SAIC) (P2)
- ◆ "Lightweight Broadband Variable Depth Sonar - Tow Body Design, Fabrication & Sensors," Mr. Michael Werbicki (Naval Sea Systems Command) (P3)
- ◆ "A Design Tool for the Identification and Linkage of Safety-Critical Factors to their Mitigating Requirements," Ms. Janet Gill (Naval Air Systems Command) (P4)
- ◆ "Unusual H2 Sensitivity of Highly Oriented Laser Ablated Thin films of SnO2 on (1102) Sapphire and (100) LaAIO3," Dr. Rambabu Bobba (Southern University) (P5)
- ◆ "An Intelligent Adaptive Control System Model," Dr. Edgardo Oliveros (Inter American University of Puerto Rico) (P6)

**Poster Paper Hours**
**Tuesday: 1015-1600 & 1800-2000**
**Wednesday: 0730-1200 & 1330-1530**

## MEET & GREET RECEPTION (Tuesday, 24 July 1800-2000)

This event, co-sponsored by Weapons Systems Technology Information Analysis Center, is a wonderful opportunity for attendees to mingle with poster paper authors and exhibitors. The reception will be held in the Exhibit area from 1800 - 2000. A selection of wines, soft drinks, and bottled water will be provided, as well as a cash bar and light hors d'oeuvres. Door prizes will be given away during this reception. Those attendees who fill out their exhibitor card found in their registration package are eligible to win. Instructions are on the card.

**Location: Golden Ballroom**

# Exhibits

**Chairpersons: Ms. Sue Souza (Naval Undersea Warfare Center) &
Ms. Cathy Griffith (Anteon Corporation)**

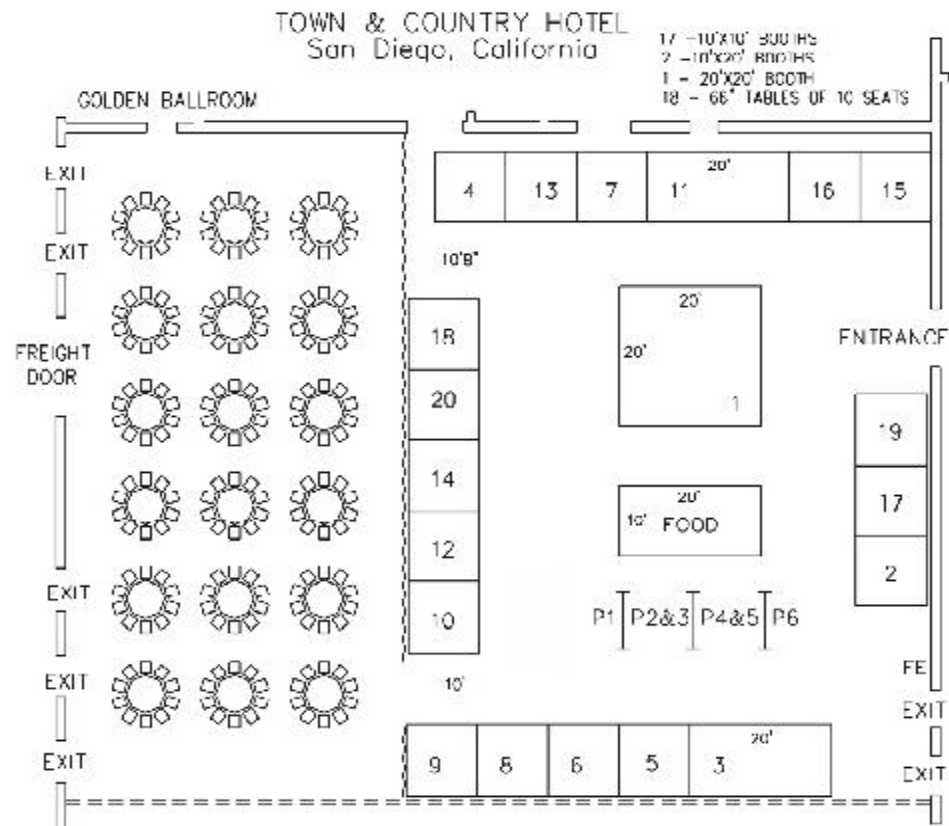*Current Exhibitors include:*

AFOTEC (19)
Air Force Research Laboratory Information Directorate (2)
Air Force Research Laboratory Sensors Directorate (1)
DDC-I (9)
Defense Modeling & Simulation Office (10)
Dine College (14)
ITT (8)
Joint Synthetic Battlespace (4)
Naval Air Systems Command, Aircraft Division (11)
Naval Under Sea Warfare Center (16)
Naval Air Systems Command, Weapons Division, Point Magu (7)
Naval Air Systems Command, Weapons Division, China Lake (13)
SAIC (17)
Software Engineering Division, Robins AFB (20)
Software Engineering Associates (6)
Threat Representation & Validation (Sverdrup Technologies, Inc. &
National Air Intelligence Center) (3)
Tobyhanna Army Depot (5)
US Army Aviation & Missile Command (18)
Virginia Tech (15)
Weapon Systems Technology Information Analysis Center (12)

**Exhibit Hours
Tuesday: 1015-1600 & 1800-2000
Wednesday: 0730-1200 & 1330-1530**

# Exhibits & Poster Paper Map

Each poster paper and exhibit are identified by a number, or letter and number. The map of the Golden Ballroom below uses those letters and numbers to show the location of each poster and exhibit within the ballroom.

# Town & Country Map

The 2001 JAWS S3 will be held in the Pacific Salons 1, 2, and 3. Exhibits and poster papers will be located in the Golden Ballroom. Registration will be held in the Grand Foyer.



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# Notes